

Remarks / Arguments

Claims 1-33 are pending. Claims 25-33 were withdrawn with traverse in response to a restriction requirement. Claims 1-24 stand rejected. New claims 34-37 are added herein.

New claims 34-37 are being presented at this time to more completely cover a particular aspect of Applicants' invention. Further, it is submitted that new claims 34-37 raise no new issues and do not require the Examiner to conduct an additional search, since the claims merely clarify the subject matter already presented. Newly added claims 34-36 recite a method for treating a post-CMP processed substrate comprising, *inter alia*, contacting the post-CMP processed substrate with a process solution consisting of a solvent selected from an aqueous solvent, a non-aqueous solvent, and combinations thereof and about 10 ppm to about 500,000 ppm of at least one surfactant having the formula (I) and (II). Support for this claim limitation is found, for example, at paragraphs [0013] – [0018], Examples 1a through 1c, Table I, Examples 2a and 2b, Table II, and claims 1, 11, and 14-16. New claim 37 recites a method for treating a post-CMP processed substrate comprising "a semiconductor material." Support for this claim limitation is found, for example, at paragraphs [0011] and [0019]. Applicants respectfully request that the Examiner enter the above new claims.

Restriction Requirement:

In the present application, the Examiner has further grouped the claims as follows:

- I. Claim 1-24 "drawn to a method, classified in class 134, subclass 26"; and
- II. Claims 25-33 "drawn to a composition, classified in class 510, subclass 175".

In the teleconference of September 13, 2004, Applicant requested that the claims in group I or claims 1-24 be elected with traverse. As a result of this election, Applicants are withdrawing the claims in Group II but reserving their rights under 35 USC § 121 to file a divisional application for the non-elected claims and/or request for rejoinder upon allowance of the elected claims.

Applicants respectfully traverse the restriction requirement on the following basis. If the search and examination of the entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to independent or distinct inventions. MPEP §803. Applicants respectfully submit that there would be no

serious burden on the Patent Office to examine in this application all of the present claims because the subject matter of the claims is sufficiently related, e.g., a method for reducing defects during the manufacture of semiconductor devices and a process solution to treat a post-CMP processed substrate wherein at least a portion of the substrate surface comprises a low dielectric constant film, that a search of the claims in any one Group would encompass a search for the subject matter of the other Group.

Rejections under 35 USC § 112:

Claims 1-24 are rejected under 35 USC § 112, ¶ 1 “because the specification, while being enabling for a semiconductor wafer, does not reasonably provide enablement for any type of substrate”. It is well established that not everything that is necessary to practice the invention need be disclosed and what is well-known is best omitted.” *In re Buchner*, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the knowledge and skill level in the art. Furthermore, the scope of enablement must only bear a “reasonable correlation” to the scope of the claims. *In re Fisher*, 166 USPQ 18, 24 (CCPA 1970). Applicant maintains that the claim term “substrate” is sufficiently enabling for one skilled in the art to practice the claimed invention. The claim term “substrate” is further modified by the additional terms “post-CMP processed” and “wherein at least a portion of a surface of the substrate comprises a low dielectric constant film”. Support for these claim terms is found in the specification, for example, in [0009], [0010], [0011], and [0012]. Applicant respectfully requests the removal of the § 112, ¶ 1 rejections of the claims.

Claims 1-24 are rejected under 35 USC § 112, ¶ 2 as allegedly being indefinite “because it is unclear how the given method steps reduce defects”. Claims 1 and 11 were amended to recite “treating a post-CMP processed substrate” rather than “reducing defects during the manufacture of semiconductor devices”. Support for the recitation is provided, for example, in the specification at paragraph [0010], [0011], and claim 24. No new matter is being entered in making the amendment; and the amendment is not being made to limit the subject matter of the claim. Applicant respectfully requests the removal of the § 112, ¶ 2 rejections of the claims.

Prior Art Rejections:

Claims 1, and claims 3 and 5-10 which depend therefrom, and claim 11, and claims 12 – 24 which depend therefrom, are rejected under 102(b) as allegedly being anticipated by U. S. Pat. No. 6,310,019 (“Kakizawa et al.”). Kakizawa et al. teaches an alkaline cleaning composition having a nonionic surfactant having an acetylene group -C≡C- and an N-containing alkaline substance (see Kakizawa et al. at col. 2, lines 53-68 through col. 3, lines 1-9 and col. 10, lines 1-67). Applicant has amended claims 1 and 11 to remove the surfactants having the formulas (I) and (II), or surfactants having an acetylene group. In light of Applicant’s amendments, Applicant respectfully requests the removal of the 102(b) rejections of the claims.

Claims 1, and claims 2-5 and 7-10 which depend therefrom, and claims 11, and claims 12-24 which depend therefrom, are rejected as allegedly being anticipated under 35 USC § 102(e) by published patent application 2004/0053800A1 (“Zhang et al.”). Applicants respectfully traverse the 35 USC § 102(e) rejections of these claims because the present application and the Zhang et al. application are not “by another”. Applicants are unclear as to why the rejection is a 35 USC § 102(e) rather than a provisional 35 USC § 102(e) / § 103(c) rejection. The Zhang et al. application is currently pending and is presently assigned to the assignee of the present application. Evidence of the common ownership of the present application and the Zhang et al. application are provided at REEL/FRAME 015009/0424 and REEL/FRAME 014592/0941, respectively. Further, the inventor of the present application and the Zhang et al. application were under an obligation to assign their respective inventions to the assignee, Air Products and Chemicals, Inc., at the time the invention was made.

Claims 4 and 21-23 are rejected under 103(a) as allegedly unpatentable over Kakizawa et al. in view of U. S. Pat. No. 6,585,825 (“Skee”). Skee, like Kakizawa et al., teaches alkaline compositions having one or more metal ion-free bases at sufficient amounts to produce a pH of about 11-13 and optionally one or more surfactants which could include an acetylenic diol. As previously discussed, Applicant has amended claims 1 and 11 to remove formulas I and II. In light of Applicant’s amendments, the 103(a) rejections of the claims should be removed.

SUMMARY

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned Attorney at the telephone number listed below.

Respectfully submitted,



Rosaleen P. Morris-Oskanian
Attorney for Applicant(s)
Registration No. 47,321
7201 Hamilton Boulevard
Allentown, PA 18195-1501
(610) 481-8169

attachments: Petition for a Two Month Extension of Time

PTO Form SB/22